



Medical School Hotline

The Impact of Changes in Medical Care on Medical Education

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There have been major changes in health care delivery during the past decade. These changes have affected medical education nationally and in Hawaii. They have resulted in some fundamental alterations in how and where medical education takes place. The impact of these changes in health care delivery has been somewhat muted in Hawaii because the John A. Burns School of Medicine had, from its inception, placed an emphasis on primary care. It was therefore an early leader in utilizing local ambulatory clinics as sites for medical education.

Among the major medical education initiatives that have resulted from managed care are:

1. Emphasis on primary care and utilization of ambulatory clinics as teaching sites.
2. Introduction of distance education and telemedicine techniques.
3. Increased number of courses to make physicians knowledgeable in medical ethics, interpersonal skills and alternative medicine.
4. Use of computer assisted instruction.
5. Introduction of Evidence Based Medicine.
6. Instruction in Women's Health and Geriatric Issues.
7. Teaching of issues related to cost-effective practice in medicine.

Emphasis on Primary Care

Until a few years ago the majority of physicians graduating from American medical schools went on to specialty training. The developing surplus of medical specialists coupled with an increasing demand for primary care physicians ("gate keepers") has resulted in an emphasis on training primary care physicians. State and Federal Government initiatives helped to stimulate this shift. Funds were provided to encourage medical schools to emphasize primary care. The Federal Government began to penalize residency programs that turned out a disproportionate number of specialists.

In the past, the majority of student education occurred on the inpatient wards of large urban hospitals. Now these institutions have constructed their own outpatient clinics and partnered with private clinics to increase student's experience in outpatient medicine.

With the increased shift to managed care, medical schools, hospitals and clinics are coming under increased financial pressures. Medical schools and their affiliated hospitals and clinics must now compete with clinics that do not support teaching programs. The payments once available to support these programs have disappeared in the increasingly competitive health care environment. Private physicians and clinics involved with medical education are finding that they no longer can accept the decreased productivity

inherent in this activity. Medical schools are increasingly being rebuffed in their attempts to find clinical teaching locations.

The University of Hawaii Medical School has always been a leader in its emphasis on training primary care physicians. Medical school clerkships and residency experiences in Internal Medicine, Family Practice, Pediatrics and Obstetrics and Gynecology have for many years occurred at small clinics and physician offices around the state. Major hospitals in Honolulu have traditionally supported large teaching ambulatory care clinics.

Telemedicine and Medical Education

The increased emphasis on primary care has resulted in medical students having their clinical experiences away from the medical school campuses. It is imperative that the medical school faculty continue to interact with the students to teach them the course material. In some cases this has been accomplished by having the students return frequently to the medical school campus. In other cases this is accomplished by having the faculty travel to the clinics. Neither of these techniques has been totally successful. A number of schools have begun to experiment with Teleconferencing to bring students at outlying facilities together with the faculty for frequent interactions. Telemedicine has also made it possible to provide these students increased access to medical school library resources, specialists and even clinical consultations. Whether this technique, by permitting greatly enhanced two way interactions, will be more successful than previously used one-way television presentations remains to be determined.

John A. Burns School of Medicine was an early pioneer in telemedicine through links with the Tripler Army Hospital. A number of initiatives are now underway to use televideo to enhance medical school teaching at locations outside Honolulu.

Medical ethics, interpersonal skills and alternative medicine

High profile legal cases revolving around such issues as death and dying, right to die, and doctor assisted suicides have resulted in an awareness that physicians need training in medical ethics. In the past formal courses in medical ethics were rarely included in the medical school curriculum. It was believed that skills in this area would be developed through actual case experience during residency or clinical practice. Medical schools around the country have realized that their students were not well equipped to handle these issues.

Concerns by clinics and HMOs that graduating medical students had poor patient interaction techniques have resulted in an increased emphasis on teaching interpersonal skills. How to talk to patients, how to deal with the elderly and handicapped individuals as well as members of minority groups are areas of concern. Cultural sensitivity in the practice of medicine has been receiving increased attention.

There is recognition that a large percentage of Americans get some or all of their medical care from alternative care providers (chiropractors, acupuncturists, herbalists, naturalists and others). Physicians are often poorly informed about these practices. A number of medical schools have recently developed courses in Alternative Medicine.

Being a multicultural state, Hawaii was an earlier leader in teaching culturally sensitive medicine. Exposure to alternative medical practices has long been part of the medical student's

experience at many rural clinics throughout the State.

Computers in Medical Education

For over a decade there has been a general belief that computers should play a significant role in medical education. Computer Assisted Instruction (CAI) may be useful in helping medical students learn factual material. Early programs at such schools as Ohio State, University of Illinois and Harvard Medical School, indicated that the computer could assist the medical school faculty in presenting this material. Computer simulations may be helpful in teaching students how to make cost-effective decisions about diagnosis, therapy, and follow-up care. They can do so without exposing patients to the risks inherent in receiving care from students still in training. Computer-assisted mannequins permit students to practice surgical techniques, resuscitation skills and a myriad of other manual techniques.

Recently there has been considerable interest in the Internet and the World Wide Web (WWW) of the Internet in medical education. Courses developed on the WWW would permit greater sharing of educational material among medical schools and permit more convenient access to computer assisted teaching techniques.

While such material has become increasingly popular, there is little data supporting a clear benefit in medical education. In a recent article in *Academic Medicine* this author pointed out ten reasons why the Internet and Computer based medical education material may not be a panacea. These included: internet based courses are not well integrated into the medical school curriculum; these programs are often poorly designed; frequently students are not tested on the content presented in these courses; and computer equipment is frequently difficult to access and non-standardized.

The University of Hawaii has an Instructional Resources Laboratory that gives students access to computer teaching modalities. Special classes are available to teach students computer skills and most students are familiar with the medical resources on the Internet. At Queens Medical Center, students and residents gain firsthand experience with computer based order entry.

Evidence Based Medicine

The emphasis place by HMOs on the cost-effective practice of medicine has increased the requirement that physicians be able to defend their clinical decisions before review groups. This has resulted in an increased interest in evidence based medicine. There is growing recognition that there are some medical practices that have not been subjected to rigorous clinical testing. This has resulted in increased interest in teaching students the careful review of the literature in order to ascertain which practices are based on sound clinical evaluation.

Women's and Elderly Health Issues

Various factors have contributed to the belief that traditional medical education does not place sufficient emphasis on the study of women's diseases. Medical schools have developed courses in women's health to make physicians more responsive to this group's needs.

As the general population ages, more and more patients are over 65 years of age. A number of years ago it became apparent that these older patients have very particular health needs. Their reactions to medication, disease profile, physiologic changes associated with aging, inability to take care of themselves and other issues separate them from the general population. The specialty area of Geriatrics has evolved over the past ten years with specialized courses for medical students, residency and fellowship programs, special research funding and Specialty Board designation.

The University of Hawaii Medical School has special programs for women's health needs and has been designated a special Geriatric Research Center.

Cost Effective Medicine

Managed care has brought with it an increased emphasis on cost-effective medicine. Students are being taught how to calculate the cost-effective component of test selection. They are being apprised of the cost of various diagnostic and therapeutic modalities in order to achieve cost efficiencies.

These are very exciting times for medical education. The John A. Burns School of Medicine has been a pioneer in meeting many of these challenges by actively promoting and emphasizing training in primary care in outpatient clinic settings. The curriculum reflects a concern for training physicians who are grounded in issues relating to medical ethics, interpersonal skills, alternative medicine, women's health, geriatrics, evidence based medicine and cost-effective medicine.

References

1. Friedman, RB, Top ten reasons the World Wide Web may fail to change medical education, *Acad Med*, 1996; 71(9):979-81

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